

VERSION WITH MARKINGS TO SHOW CHANGES MADE:

IN THE SPECIFICATION:

Amend paragraph [0021] as follows:

[0021] -- The circular ring shaped bearing disks 2, 3 shown in FIG. 2 are made from a blank, which has been punched out from a metal sheet and subsequently shaped through a non-cutting shaping process on a suitable shaping apparatus, for example, a hydraulic press or a knuckle-joint press with a shaping speed of ≤ 2 m/min. An example of a material for the blank includes steel of type Ck 75 which contains 0.70 to 0.80% of C, 0.15 to 0.35% of Si and 0.50 to 0.80% of Mn, whereby the added k in Ck K 75 indicates a particularly low content of phosphorus of $\leq 0.035\%$ and sulfur of $\leq 0.015\%$. After a hardening and tempering process, the thus through-hardened material has a hardness of 700 HV. The disks 2, 3 made in this manner can be subjected to a load at a safety of 1, i.e. the hardness of 700 HV permits a maximum admissible load corresponding to also 700 HV with respect to the effective stress.--.

IN THE CLAIMS:

Amend the following claims:

3. (Amended) The thrust ball bearing of claim 1, wherein the bearing disks are made of a steel of the type selected from the group consisting of C 45, C 55, Ck 67, C75, 100 Cr 6 and 85 Mn 3.

6. (Amended) The thrust ball bearing of claim 1 for use in a scroll compressor having a housing accommodating a revolving scroll member mounted on a crank pin of a shaft, a stationary scroll member secured in the housing, said first bearing disk connected with the revolving scroll member and said second bearing disk securely fixed to the housing, whereby a compressor space with variable volume for transport of a medium is formed during interaction of the revolving scroll member and the stationary ~~second~~ scroll member, and a generated thrust is absorbed by the revolving scroll member via the bearing balls.

9. (Amended) The scroll compressor of claim 7, wherein the bearing disks are made of a steel ~~of the type~~ selected from the group consisting of C 45, C 55, Ck 67, C75, 100 Cr 6 and 85 Mn 3.

REMARKS

The last Office Action of February 8, 2002 has been carefully considered. Reconsideration of the instant application in view of the foregoing amendments and the following remarks is respectfully requested.

Claims 1-11 are pending in the application.

It is noted that the disclosure is objected to because of some informalities. It is further noted that claims 3, 6 and 9 are rejected under 35 U.S.C. §112, , second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No.5,921,684 (hereinafter "Niina") in view of U.S. Pat. No. 3,737,204 (hereinafter "Burkhardt").

OBJECTION TO THE DISCLOSURE

The changes suggested by the Examiner were not followed because the proposals are inaccurate. The designation "Ck 67" refers to a heat-treated steel with a carbon content of 0.67%, whereby "k" indicates a particularly low content of phosphorous and sulfur. Please note paragraph [0021] of the instant specification where the designation "k" has been explained. Likewise the designation "Ck 75" refers to a heat-treated steel having a carbon content of 0.75% and a particularly low content of phosphorous and sulfur.

Applicants have however corrected an obvious typographic error in paragraph [0021] as "CK 75" should correctly read "Ck 75".

Withdrawal of the objection to the disclosure is thus respectfully requested.

REJECTION OF CLAIMS 3, 6, 9 UNDER 35 U.S.C. §112, SECOND PARAGRAPH

Applicants have amended claims 3, 6, and 9 to address the §112 rejection. Please note that the reference to "type" in claims 3 and 9 merely refers to designations of subsequently listed steel grades. Applicant has, however, deleted the reference to "of the type" in the claims involved. These changes to the claims are cosmetic in nature and do not narrow the claims within the meaning of the *Festo*-decision. *Festo Corp. v. Shoketsu Kinsoku Kogyo Kabushiki Co.*, 56 USPQ2d 1865 (Fed. Cir. Nov. 29, 2000)(en banc).

Please note that the listed steel types or designations are generally known to the skilled artisan. Low-alloy steels of this type are designated by three identifications. The first identification is a number which relates to 100 times a mean carbon content in percent. The second identification relates to an alloy element, and the third identification is a number which relates to the alloy content in percent under consideration of a particular number, which for Cr and Mn is 4. For example 100 Cr 6 refers to a steel with approx. 1% C and approx 1.5% Cr ($6/4=1.5\%$), whereas 85 Mn 3 refers to a steel with approx 0.85% C and approx 0.75% Mn ($3/4=0.75\%$).

Withdrawal of the rejection of the claims 3, 6 and 9 under 35 U.S.C. §112, second paragraph is thus respectfully requested.

**REJECTION OF CLAIMS 1-11 UNDER 35 U.S.C. §103(a) AS BEING
UNPATENTABLE OVER NIINA IN VIEW OF BURKHARDT**

The rejection under 35 U.S.C. 103(a) is respectfully traversed.

The present invention is directed, in general, to a thrust ball bearing and, more particularly, to a scroll compressor having incorporated a thrust ball bearing which includes bearing disks made from through-hardenable ferrous material.

Niina describes a scroll compressor having bearing disks and bearing balls for rolling along a track. As admitted by the Examiner, Niina fails to disclose bearing disks made of through-hardenable ferrous material.

The Examiner based the §103(a) rejection on a combination of Niina with Burkhardt. The Burkhardt reference is directed to a roller bearing having an outer race and rollers made of through-hardening steel.

It is applicant's contention that the Burkhardt reference does not constitute a reference which a person skilled in the art would consider to combine with Niina, when attempting to solve the problems addressed by the present invention. In this connection, reference is made to the decision In re Clay, 23 USPQ2d 1058 (CAFC, June 10, 1992) which discussed the question of "analogous art". As pointed out by the Court, there are two criteria for determining whether prior art is analogous: (1) whether the art is from the same field of endeavor, regardless of

the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved. While Niina discloses a scroll compressor, including bearing disks which move eccentrically to one another and having a thrust ball bearing designed to resist **axial** loads, the Burkhardt reference is directed to an anti-friction bearing of the radial bearing type, designed to resist **radial** loads. Axial bearing and radial bearing differ substantially as far as rolling conditions are concerned and thus cannot simply be compared. In particular, in conjunction with a scroll compressor, which the present invention is directed to (claims 7-11), the incorporation of a particular thrust bearing is involved in order to support thrust force of an orbiting scroll member against a fixed scroll member.

Thus, the Burkhardt reference, relating to radial bearings, is not within the field of applicants' endeavor, and is not concerned with the problems facing applicant in the context of implementing a scroll compressor with bearing disks of high value of fatigue strength. Therefore, it is applicants' contention that Burkhardt is non-analogous art which a person skilled in the art would not refer to and combine with Niina.

It is well established that the fact that individual elements of the present invention may be found in the prior art is not determinative as to the question of obviousness. As stated by the Federal Circuit in *In re Rouffet*, 47 USPQ2d, 1453, 1457 "Most, if not all, inventions are combinations and mostly of old element. Therefore, an examiner may often find every element of a claimed invention in the

prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be an illogical and inappropriate process by which to determine patentability."

Thus, there must be some motivation to combine the references to create the case of obviousness, and a showing that a skilled artisan, confronted with the problems as the inventor, would select the elements from the cited prior art references. It is applicant's contention, that the Examiner failed to make a prima facie case of obviousness and failed to explain the motivation one with no knowledge of applicant's invention would have to combine the references in a manner suggested. The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Gordon, 733 F.2d at 902. This, however, is not the case here. It is applicant's contention that the Examiner relied upon hindsight to arrive at the determination of obviousness, by piecing together the teachings of the prior art so that the claimed invention is rendered obvious. In re Gorman, 933 F.2d 982.

For the reasons set forth above, it is applicant's contention that neither Niina nor Burkhardt, nor a combination thereof teaches or suggests the features of the present invention, as recited in claim 1, which is directed to a particular type of

thrust ball bearing, and claim 7, which is directed expressly to a scroll compressor having incorporated therein this particular type of axial bearing.

As for the rejection of the retained dependent claims, these claims depend on claims 1 and 7, respectively, share their presumably allowable features, and therefore it is respectfully submitted that these claims should also be allowed.

Withdrawal of the rejection of claims 1-11 under 35 U.S.C. §103(a) and allowance thereof are thus respectfully requested.

CITED REFERENCES

Applicant has also carefully scrutinized the further cited prior art and finds it without any relevance to the newly submitted claims. It is thus felt that no specific discussion thereof is necessary.

CONCLUSION

Applicant believes that when the Examiner reconsiders the claims in the light of the above comments, he will agree that the invention is in no way properly met or anticipated or even suggested by any of the references however they are considered.

In view of the above presented remarks and amendments, it is respectfully submitted that all claims on file should be considered patentably differentiated over the art and should be allowed.

Reconsideration and allowance of the present application are respectfully requested.

Should the Examiner consider necessary or desirable any formal changes anywhere in the specification, claims and/or drawing, then it is respectfully requested that such changes be made by Examiner's Amendment, if the Examiner feels this would facilitate passage of the case to issuance. If the Examiner feels that it might be helpful in advancing this case by calling the undersigned, applicant would greatly appreciate such a telephone interview.

Respectfully submitted,

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